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PATENT SPECIFICATION

NO DRAWINGS

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COMPLETE SPECIFICATION

Improved Cork Gaskets

We, SHELLER MANUFACTURING CORPORATION, a Corporation organized and existing under the laws of the State of Indiana, United States of America, of 1641, Porter, Detroit, United States of America, do hereby declare the invention for which we pray that patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to cork gaskets and is especially concerned with the provision of a cork gasket having an improved coating.

Cork gaskets are primarily used to provide an effective seal between confronting faces of adjacent elements when positioned therebetween to prevent the passage of fluid or vapour. Typically, these cork gaskets are, to a limited extent, resilient and therefore effectively conform to the contour of the confronting faces. However, in order to provide an effective seal, the cork gasket must not only fill the gap between these faces but also the gasket must lower the vapour transmission rate of the sealed fluid. Additionally, modern day applications require that these cork gaskets be able to withstand relatively high temperatures and pressures and have a good oil and grease resistance. Often the fluid pressures and temperatures existing in modern processes quite exceed those against which untreated cork would be effective. In addition, the detergent substances in present day lubricating oils tend to attack and pass or escape through untreated gaskets. The present invention relates to the provision of cork gaskets which have been treated to improve their sealing characteristics.

The present invention provides a cork gasket coated with an emulsion of an acrylic-modified vinylidene chloride copolymer. This coating renders the gasket substantially impervious to vapour transmission. Additionally, the gasket coating promotes versatility in processing in that it is compatible with plasticizers to increase its flexibility, various pigment mat-

erials for identification purposes and filler materials.

The gaskets to which the present invention relates include, as described above, those used to provide a fluid and vapour seal between confronting faces of adjacent machine elements. These gaskets conventionally are fabricated from sized cork particles which may be mixed with one or more types of filler substances in particle or liquid form and held together in sheet form by a binding agent.

The gaskets are delivered in their raw and untreated form to any device adapted to apply coating emulsions thereto. In processing these gaskets, it should be understood that this coating device can form one station in a continuous gasket forming and processing assembly, or it may be an independent device to which preformed gaskets are delivered. One continuous coating device particularly adapted to coating sheet articles of this type with liquid is a roller type. In this device sheet articles are delivered to a pair of continuously rotating absorbent rollers saturated with a coating liquid. The rollers are positioned with their peripheries contacting and their axes offset horizontally so that a continuous "pool" of coating liquid is formed on top of the lower roll. The sheet articles are drawn through and immersed in this pool thereby ensuring that the entire outer surface of the article is coated. Other suitable coating devices capable of applying emulsion to gaskets include various forms of liquid spray and wiping devices. The particular mode of applying the emulsion to the gaskets is not important nor is it intended to be limiting of the present invention. It is important that the gaskets be completely covered with this emulsion. This may require several coats of the liquid emulsion especially where the gasket is highly porous. After the coating has been applied it is dried and cured as by heating the gaskets in an oven.

The coating liquid used herein is, as described above, an emulsion acrylic-modified

[Price 4s. 6d.]

vinylidene chloride copolymer. One such emulsion is manufactured by the Rohm Haas Company of Philadelphia, Pennsylvania, and sold under the trademark "Rhoplex R-9". The preferred amount of coating applied to the gasket is a continuous film having a thickness in the range of 0.0005 to 0.0020 inches. Films lesser in thickness may be beneficial if continuous; those greater would be acceptable functionally but also would be proportionally higher in cost. This substance when applied to the outer surface of raw and untreated cork gaskets makes the gasket highly impervious to liquid or vapour transmission and highly resistant to corrosion attack. More important, this emulsion along with being relatively inexpensive, readily lends itself to application by the various devices described above, and is compatible with various plasticizers, fillers and/or pigments.

The emulsion of an acrylic-modified vinylidene chloride copolymer when mixed with a plasticizer emulsion makes the gaskets so coated more flexible and therefore more useful in sealing between complex curved confronting faces where the gaskets must be bent accordingly. In addition, the gaskets so coated exhibit excellent sealing properties and resistance to corrosion and a lesser tendency to harden with use. Plasticizers which have been found compatible with the emulsion of an acrylic modified vinylidene chloride copolymer include between about 1 and 10 per cent by weight of the coating of dibutyl phthalate.

Another example of the versatility of the emulsions of the acrylic-modified vinylidene chloride copolymer is its compatibility with

fillers, such as carbon black and with various pigments and dyes. In order to classify and identify different types of gaskets according to particular properties, small quantities of different pigments, dyes or carbon blacks as a filler are mixed with the liquid emulsion thereby colouring it and the gaskets to which it is applied.

The coated gaskets of the present invention have the desired physical properties necessary to provide an effective seal and the gasket coating emulsion lends itself to easy handling and applying to gaskets which, along with the relatively low cost of the emulsion as compared with other coating substances, provides an effective gasket at a relatively low price.

WHAT WE CLAIM IS:—

1. A cork gasket having a coating of an emulsion of an acrylic-modified vinylidene chloride copolymer.

2. A cork gasket according to claim 1, wherein the emulsion contains between 1 and 10 per cent by weight of the coating of dibutyl phthalate as a plasticizer.

3. A cork gasket according to claim 1 or 2, wherein the emulsion contains a small quantity of carbon black as a filler.

4. A cork gasket according to claim 1, 2 or 3, wherein the emulsion contains a small quantity of a dye for colour identification.

5. Coated cork gaskets substantially as herein described.

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